

Notice of Allowability

Application No.

09/922,973

Examiner

Kripa Sagar

Applicant(s)

BLOOMSTEIN ET AL.

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/17/04.
2. ☒ The allowed claim(s) is/are 1-11, 13-23 and 25-27.
3. ☒ The drawings filed on 10 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

1. The amendment filed 5/17/04 has been entered. Claims 1,4,6 have been amended. Claims 14-27 are newly added. No new matter has been introduced. Claim 12 is cancelled.

Claims 1-11,13-27 are under consideration.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37.CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with attorney Tom Engellenner on 7/20/04.

The application has been amended as follows:

In the claims:

Claim 13, last line: replace the term "smaller" with "decreasing".

Claim 23, last line: replace the phrase " , using the smaller spot size to expose the buffer region." with the following: " ; wherein the buffer region is patterned with a spot size larger than a spot size used in a critical region and smaller than the maximum spot size used in an interior region."

Cancel claim 24.

Claims 1-11,13-23,25-27 are under consideration.

Allowable Subject Matter

3. Claims 1-11,13-23,25-27 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The amended claims 1,13 and new claims 14,23 recite an intermediate spot size to expose a buffer zone; this is not taught in the cited references. Claim 6 recites varying the spot size while maintaining the scanning speed. This is not discussed in the cited references.

As argued by the Applicant this has several advantages not discussed in the prior art. These include speedier patterning and elimination of edge effects. The claims are based on modulation of a beam with a Gaussian or an Airy-disk intensity distribution. None of the cited references considers beam profiling.

US Pat.5623473 to Ichihara discusses modulating a beam to produces a diffraction grating zone plate wherein the resist profile is formed by adjusting the exposure dose. The beam size is accordingly modulated. It does not teach multiple spot sizes.

US Pat. 6406658 to Manners et al. teaches spot-size modulated patterning in stereolithography – it discusses multiple spot sizes (abstract & fig.5). However there are no defined zones and the beams of different sizes are used in overlapping zones.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

6. Applicant's arguments have been considered in allowing the claims.

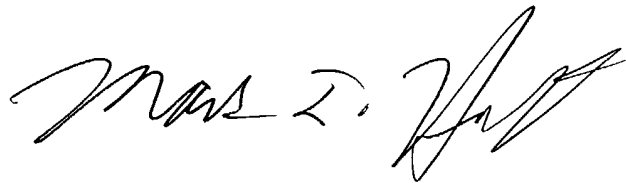
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kripa Sagar whose telephone number is 571-272-1392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH/ks



MARK F. HUFF
SUPERVISORY PATENT EXAMINER
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